Can Children Learn an L2 More Successfully Than Adults?

Eleanor Sugiura

Introduction

When considering the role of age in the acquisition of a second language (L2) it has long been assumed by the general public that 'younger is better'. If it is true that children can 'pick up' a second language more successfully than adults then it must follow that there is a *critical period* in place before adulthood which somehow changes the way a language is acquired. In biology the critical period is defined as a limited period in the development of an organism during which a particular activity or competency must be acquired if it is to be incorporated into the behaviour of that organism (Singleton & Ryan, 2004). Lenneburg (1967) hypothesized that a critical period from age two to puberty existed and that language could only be acquired within that time. Later research seems to confirm this in various fields including: feral children (e.g., Genie in Curtiss, 1977) and the use of sign language with deaf children (Mayberry, 2007). In neurology various biological processes have been considered including lateralization, plasticity, myelination of brain nerve fibres and pubertal increases in estrogen or testosterone. However, thus far there is no evidence of a biological irreversible change which could explain the critical period hypothesis (Ortega, 2009). Lennenburg (1967) proposed that a critical period extended to second language acquisition. A seminal study by Johnson and Newport (1989) detailed empirical evidence to support the theory that age effects second language acquisition. Johnson and Newport (1989) reported a cut-off point at pre and post puberty ages between the English proficiency of immigrants arriving in the US. However, later studies have both corroborated (DeKeyser, 2000) and refuted their results (Birdsong & Molis, 2001; Flege, Yeni-Komshian & Liu, 1999). The debate on the critical period hypothesis has continued and running alongside has been the debate about ultimate achievement. A third factor unrelated to the critical period hypothesis is rate of attainment. Do adults or children learn faster?

In this essay I argue that is has not been conclusively proven that children are more successful learners than adults. Since the context of language learning cannot be ignored, early (pre puberty) and late (post puberty) learners' success in language acquisition both naturalistically and in formal settings will be explored. Children will be defined as aged up to 12 and adolescents as aged over 12 to 17. Adults will be defined as aged 18 and over.

Naturalistic settings: Immigration and ultimate achievement

In studies investigating whether there is an age-related limitation on the learning of a second language, proficiency is often evaluated using grammaticality judgement tasks. These tasks involve subjects listening to a sentence and indicating whether it is grammatical or ungrammatical. If a critical period exists whereby adolescents and adults cannot learn language as effectively as children then it is argued that empirical research would show a discontinuity between phonological and morpho-syntactic proficiency pre and post puberty. It must be pointed out, that since the introduction of the Common European Framework of Reference (CEFR) in 2001, proficiency is increasingly measured using the CEFR standards which incorporate communication strategies and discourse competence into evaluation as well as grammar and vocabulary (Harsch, 2016). However in many studies investigating if there is a critical period for acquiring a second language, evaluation of proficiency focused on grammatical structures and pronunciation accuracy.

Numerous studies have investigated the relationship between the age of arrival (AoA) of immigrants in their host country and language proficiency. In a replication of the aforementioned study by Johnson and Newport (1989), DeKeyser (2000) found corroborating results in a study of Hungarian immigrants to the US with a length of residence of over 10 years. The authors of these studies concluded that a critical period exists and children learning a language before puberty ultimately achieve higher attainment in an L2 than those arriving in the host country after puberty. However, in reanalysis of the data obtained and replication of methodologies used, a less clear picture emerges. In the study by Johnson and Newport (1989) criticisms have been made that the immigrants had only lived in their native country for 5 years and a glaring exception in the study was a 23 year old late arrival who scored as high as native speakers on the tests (Ortega, 2009). In addition Bialystok and Hakuta (1994) showed that for some of the grammar structures tested, age-related effects were not present and on recalculation of the data, results showed a decline in proficiency after the age of 20, well past puberty. DeKeyser (2000) also divided age by a different scale than Johnson and Newport (1989) making it difficult to directly compare results. Birdsong and Molis (2001) replicated the study with very different results, rather than a cut-off point they found a declining negative correlation between age of onset and morpho-syntactic attainment. Comparable to the Johnson and Newport study, Birdsong and Molis (2001) found late learners who scored highly on the tests. In light of the conflicting results of these studies it has not been conclusively proven that a critical period exists and the existence of late learners who scored at native speaker level demonstrates that adolescents and adults can learn a second language as successfully as early learners. It should also be noted that in the case of immigration to a new country at a young age whether or not the first language is retained needs to be considered. Young children arriving in a new country may replace their first language with the second language so should these cases be included in age of onset studies? Marinova-Todd, Marshall and Snow (2000) comment on a paper by Jia and Aaronson (1998) which points out that late learners are more likely to maintain their first language than early learners and that early learner use of the L2 may dominate or

replace the first language.

In studies of ultimate achievement it is argued that late learners cannot attain a high enough proficiency in a second language to pass as a native speaker (Bley-Vroman, 1989; Abrahamsson & Hyltenstam, 2009). Abrahamsson and Hyltenstam (2009) used a battery of tests covering speech production, speech perception, morpho-syntax, and formulaic language on Spanish/Swedish bilinguals who had begun L2 acquisition before and after the age of 12. The authors found that not only was there no single case of a late learner passing at native speaker level but also that early learners were fewer than expected. In contrast, researchers Ioup, Boustagui, Tigi and Moselle (1994) investigated two cases of successfully late learners of Arabic. In one case study, Julie, moved to Egypt at age 21 and after learning Arabic naturalistically for two and a half years was able to pass as a native speaker of Arabic. Other evidence of nativelike performance was found by van Boxtel, Bongaerts and Coppen (2003) who administered two types of grammar test to very advanced French and German late learners of Dutch and found that some of them had attained a native level of proficiency. Other researchers have looked at a critical period for pronunciation since it has been argued that neuromuscular programming of first language use determines how a second language is pronounced (Flege, 1999; Scovel, 1988). Whilst Scovel (2000) maintains that most adult language learners cannot master a native-like accent due to this neuromuscular programming, Flege (1999) states that it is difficult but not biologically impossible to overcome L1 influences when speaking a second language.

The ability to improve pronunciation in adulthood should not be underestimated. A recent study of Vietnamese workers who had been living in Canada for an average of 19 years and received focused pronunciation instruction were able to make significant improvements in perception and in comprehensibility and intelligibility (Derwing, Munro, Foote, Waugh & Fleming, 2014). In studies that test foreign accents, the implementation of phonological tests has been called into question. Marinova-Todd et al., (2000) argue that when judging pronunciation researchers have seldom “clearly established either the exact margins of what is considered a standard accent in the target language or the degree of variability among native speakers” (p. 19). Can we judge second language learners against so-called standard flawless accents and perfect grammar constructs when many native speakers don’t exhibit them? I would also argue that in the context of this paper a learner can achieve ‘success’ in a language despite having a slight foreign accent. Even a strong foreign accent does not necessarily impair comprehensibility according to a study by Munro and Derwing (1995).

Formal settings: School immersion and foreign language learning

The best time to start learning a second language is a question that has huge implications in education. The existence of a critical period would suggest initially learning a second language in primary school rather than secondary school would have a significant difference in proficiency in that language. In research at immersion schools, Turnbull, Lapkin, Hart and Swain (1998) found that when the amount of instructional time was held constant, early immersion students did significantly better on speaking tasks

than middle and late immersion students but by the end of secondary school, early immersion students did not do better in listening comprehension or literacy tests. Turnbull et al. (1998) concluded that older learners may learn an L2 more efficiently in some areas but that other factors such as motivation and higher aptitude may also influence results in achievement. Harley and Hart (1997) looked at 65 secondary school students in grade 11 who had started a French immersion course (receiving 50% of instruction in French and 50% in English) at grade one or in adolescence at grade seven. The grade 11 learners were tested on aptitude and L2 proficiency measures but the early immersion students' scores were on average not significantly higher than those of the late immersion learners. Harley and Hart (1997) concluded that early immersion students had L2 outcomes associated with memory ability and later immersion students had L2 outcomes associated with analytical ability.

In formal settings of foreign language learning there is overwhelming evidence in the literature of either no effect on beginning a language at primary rather than secondary school or that in fact later learners have an advantage over earlier learners. An extensive longitudinal study of 10 years by Burstall, Jamieson, Cohen and Hargreaves (1974) involving 17,000 students compared an experimental group of children taught French in primary school with a control group of children who studied French from secondary school only. After two years, at age 13, the experimental group scored better on some tests than the control group but when tested again at age 16 the control group scored the same or better on almost all of the tests. Other such studies supported Burstall et al.'s findings including a study in Japan (Oller & Nagato, 1974) which also found that older learners can achieve as much language attainment in five years as younger learners can in 11 years. More recently a study in Spain known as the Barcelona Age Factor Project (BAF) compared the learning rates and proficiency of learners at ages of onset of between two and six years old, eight, 11, 14 and over 18 years old. This comprehensive nine year study of bilingual Spanish/Catalan learners studying English as a third language found that older beginners of 11 outperformed younger beginners of age eight in written tests, oral story-telling and oral interaction (Muñoz 2003a, 2003b). The learners were tested at three time periods after 200, 416 and 726 hours of instruction. In terms of rate of learning, as hypothesized, the author found that older learners generally progressed faster than younger learners and adults acquired language fastest in the first time period. Cummins (1981) speculates that older learners score higher in literacy-related skills due to greater cognitive maturity. Singleton and Ryan (2004) point out that, if motivated, learners continue to learn a second language not only throughout their teens but throughout their lives. These studies show that the context of language learning plays a large role in the success of language acquisition and that context is comprised of many factors.

Conclusion

The aim of this paper was not to set out to prove that adults are better learners than children but rather to demonstrate it has not been conclusively proven that children are more successful learners than adults. It may be that children and adults process language differently and reach success in different ways based on

general cognitive ability, but it has not been shown that there is a fundamental difference between child and adult learning mechanisms (Singleton & Ryan, 2004). In naturalistic settings, many studies have shown a general decline in proficiency as age increases on arrival in host countries but cases of near native late learners have also been documented and it has been noted that very young children may replace their first language with the language of the host country. In immersion schools different components of language aptitude may be associated with L2 proficiency in early and late immersion students (Harley & Hart, 1997). In foreign language learning it has not been found that there is an advantage in learning a second language before puberty. It may not be possible to isolate age from other factors influencing second language acquisition such as aptitude, motivation and cognitive maturation, resulting in the unclear picture that emerges even in replicated studies.

Looking to the future, research into bilingualism has revealed a new line of inquiry that L1 and L2 influence each other as early as age two or four making it impossible to become a monoglot in either language (Sebastián-Gallés, Echeverría & Bosch, 2005). If this is the case it would seem that as Singleton (2003) suggests, it is more appropriate to compare post pubertal L2 learners with pre pubertal L2 learners than to compare L2 learners with native speakers. As Ortega states (2009) “if age effects do set in as extremely early in life as age two or four, the long-held assumption that an early start guarantees complete and successful L2 acquisition loses much of its power” (p. 26).

References

Abrahamsson, N., & Hyltenstam, K. (2009). Age of onset and nativelikeness in a second language: listener perception versus linguistic scrutiny. *Language Learning: a Journal of Research in Language Studies*, *59*, 249–306.

Bialystok, E., & Hakuta, K. (1994). *In other words: The science and psychology of second-language acquisition*. New York: Basic Books.

Bialystok, E., & Hakuta, K. (1999). Confounded age: Linguistic and cognitive factors in age differences for second language acquisition. In D. Birdsong (Ed.), *Second language acquisition and the critical period hypothesis* (pp. 162–181). Mahwah, NJ: Erlbaum.

Birdsong, D., & Molis, M. (2001). On the evidence for maturational constraints in second-language acquisition. *Journal of Memory and Language*, *44* (2), 235–249. Doi:10.1006/jmla.2000.2750

Bley-Vroman, R. (1989). What is the logical problem of foreign language learning? In S. Gass & J. Schachter (Eds.), *Linguistic perspectives on second language acquisition* (pp. 41–68). Cambridge: Cambridge University Press.

van Boxtel, S., Bongaerts, T., & Coppen, P. (2003). Native-like attainment in L2 syntax. *EUROSLA Yearbook*, *3* (1), 157–181. Doi:10.1075/eurosla.3.10box

Burstall, C., Jamieson, M., Cohen, S. and Hargreaves, M. (1974). *Primary French in the Balance*. Windsor: NFER Publishing Company.

Cummins, J. (1981). Age on arrival and immigrant second language learning in Canada: A reassessment. *Applied Linguistics*, *11* (2), 132–149.

Curtiss, S. (1977). *Genie: A Psycholinguistic Study of a Modern-day ‘Wild Child’*. New York: Academic Press.

DeKeyser, R. M. (2000). The robustness of critical period effects in second language acquisition. *Studies in*

Second Language Acquisition, *22* (4), 499–533.

Derwing, T. M., Munro, M. J., Foote, J. A., Waugh, E., & Fleming, J. (2014). Opening the window on comprehensible pronunciation after 19 years: A workplace training study. *Language Learning*, *64* (3), 526–548. doi:10.1111/lang.12053

Flege, J. (1999). Age of learning and second language speech. In D. Birdsong (Ed.), *Second language acquisition and the critical period hypothesis* (pp. 101–132). Mahwah, NJ: Lawrence Erlbaum. Retrieved from http://jimflege.com/files/Flege_in_Birdsong_1999.pdf

Flege, J. E., Yeni-Komshian, G. H., & Liu, S. (1999). Age constraints on second-language acquisition. *Journal of Memory and Language*, *41* (1), 78–104. Doi:10.1006/jmla.1999.2638

Harley, B., & Hart, D. (1997). Language aptitude and second language proficiency in classroom learners of different starting ages. *Studies in Second Language Acquisition*, *19* (3), 379–400. Doi:10.1017/S0272263197003045

Harsch, C. (2016). Proficiency. *ELT Journal*, *71* (2), 250–253.

Ioup, G., Boustagui, E., Tigi, M. & Moselle, M. (1994). Re-examining the critical period hypothesis: A case of successful adult SLA in a naturalistic environment. *Studies in Second Language Acquisition*, *16* (1), 73–98.

Jia, G., & Aaronson, D. (1998, November). *Age differences in second language acquisition: The dominant language switch and maintenance hypothesis*. Paper presented at the Boston University Conference on Language Development, Boston.

Johnson, J. S., & Newport, E. L. (1989). Critical period effects in second language learning: The influence of maturational state on the acquisition of English as a second language. *Cognitive Psychology*, *21* (1), 60.

Lenneberg, E. (1967). *Biological foundations of language*. New York: Wiley.

Marinova-Todd, S., Marshall, D., & Snow, C. (2000). Three Misconceptions about Age and L2 Learning. *TESOL Quarterly*, *34* (1), 9–34. doi:1. Retrieved from http://www.jstor.org.ezproxy.usq.edu.au/stable/3588095%20doi:1

Mayberry, R. I. (2007). When timing is everything: age of first langage acquisition effects on second-language learning. *Applied Psycholinguistics*, *28*, 537–549.

Muñoz, C. (2003a). Le rythme d'acquisition des savoirs communicationels chez desapprenants guidés. L'influence de l'âge. *Acquisition et Interaction en Langue Étrangère*, *18*, 53–76.

Muñoz, C. (2003b). Variation in oral skills development and age of onset. In M. P. García Mayo and M. L. García Lecumberri (Eds.), *Age and the acquisition of English as a Foreign Language* (pp. 161–181). Clevedon, UK: Multilingual Matters.

Muñoz, C. (2006). *Age and the rate of foreign language learning (second language acquisition)*. Clevedon, UK: Multilingual Matters Limited.

Munro, M. J., & Derwing, T. M. (1995). Foreign accent, comprehensibility, and intelligibility in the speech of second language learners. *Language Learning*, *45* (1), 73–97. doi:10.1111/j.1467-1770.1995.tb00963.x

Oller, J. and Nagato, N. (1974). The long-term effect of FLES: An experiment. *Modern Language Journal 58*, 15–19.

Ortega, L. (2009). *Understanding second language acquisition*. New York, NY: Routledge.

Scovel, T. (1988). *A time to speak: A psycholinguistic inquiry into the critical period for human language*. Rowley, MA: Newbury House.

Scovel, T. (2000). A critical review of the critical period research. *Annual Review of Applied Linguistics, 20*, 213–223. Doi:10.1017/S0267190500200135

Sebastián-Gallés, N., Echeverría, S., & Bosch, L. (2005). The influence of initial exposure on lexical representation: Comparing early and simultaneous bilinguals. *Journal of Memory and Language*, *52* (2), 240–255. doi:10.1016/j.jml.2004.11.001

Singleton, D. (2003). Critical period or general age factor(s)? In M. P. Garcia Mayo and M. L. Garcia Lecumberri (Eds.), *Age and the acquisition of English as a foreign language* (pp. 3–22). Clevedon, UK: Multilingual Matters.

Singleton, D. M., & Ryan, L. (2004). *Language acquisition: The age factor*. Clevedon: Multilingual Matters.

Turnbull, M., Lapkin, S., Hart, D. & Swain M. (1998). Time on task and immersion graduates' French proficiency. In S. Lapkin (Ed.), *French second language education in Canada: Empirical studies* (pp. 31–55). Toronto: University of Toronto Press.

（受理日　2020年 1 月 9 日）